IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Satoshi HANADA, et al.

Appln. No.:

Confirmation No.: Unknown   Group Art Unit: Unknown

Filed: November 27, 2001   Examiner: Unassigned

For: FOAMED POLYOLEFIN RESIN SHEET

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examination, please amend the above-identified application as follows:

IN THE SPECIFICATION:

Page 4, paragraph bridging pages 4-5:

In the present invention the infrared absorption spectrum of a sample is measured according to the following process. First, the sample is subjected to hot pressing at a temperature about 30 to 50°C higher than the melting point of a major component resin contained in the sample (for example about 200°C if the major component resin is a polypropylene resin) for three minutes and then subjected to cold pressing at 30°C for five minutes, to form a film having a thickness of 30 to 80 μm. The film thus obtained is loaded on an infrared spectrometer (for example FT-IR spectrometer Model 1600 manufactured by PERKIN ELMER CO., LTD.) for measurement of its infrared absorption spectrum.

Page 7, first paragraph:

The thickness of the non-foamed surface layer is not particularly limited as long as the

surface of the obtained foamed polyolefin resin sheet smoothness and may be determined

depending on the application of the sheet or the like. The thickness of the non-foamed surface

layer is usually not less than 1 μm, preferably not less than 10 μm, more preferably not less than

50 μm, from the viewpoint of sheet rigidity. From the viewpoint of lightweight property, the

non-foamed surface layer is preferably not so thick.

Page 27, second paragraph:

Infrared absorption spectrum

A resin for forming a surface layer of a foamed sheet was hot-pressed at 200°C for three

minutes, then subjected to a cold press at 30°C for five minutes, to yield a film having a

thickness of 60 μm. This film was loaded on FT-IR spectrometer (model: 1600, manufactured

by PERKIN ELMER CO., LTD.) to measure its infrared absorption spectrum.

Page 35, first full paragraph:

Foamed polyolefin resin sheet (12) obtained by the process described above and a film

(13) which was either a saponified ethylene-vinyl ester copolymer (EVOH) film (trade name:

EVAL EF-E FILM, produced by KURARE CO., LTD., thickness: 15 μm) or a non-stretched

polypropylene film (CPP) (trade name: TOYOBO "PAILENE" FILM-CT P1146, produced by

TOYOBOSEKI CO., LTD., thickness: 80 μm), were passed together between a pair of nip rolls

(14) adjusted to 120°C at a line speed of 1 m/min, while hot air was applied to the nip portion

from an air-knife (16) connected to a hot air generator (15) so that the temperature of hot air at

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the nip roll section assumed 190°C. Thus, there was obtained a laminate (17) having the foamed

polyolefin resin sheet thermolaminated with the ethylene-vinyl ester copolymer film.

Page 39, paragraph bridging pages 39 and 40:

As the non-foamed surface layer forming material there was used a resin mixture

prepared by blending 100 parts by weight of polypropylene (trade name: PF814, produced by

MONTEL CO., melting point: 159.0°C, crystallization temperature: 130.1°C, MFR: 2.2 g/10

min (230°C)) with 100 parts by weight of resin recycled from scrap of a foamed polyolefin resin

sheet formed by laminating a multi-layered foamed sheet comprising non-foamed surface layer

and foamed layer formed from a polypropylene resin and arranged into a structure of non-

foamed surface layer (80 µm)/foamed layer (2200 µm)/non-foamed surface layer (80 µm) with a

100 µm-thick multi-layered film comprising non-stretched polypropylene (hereinafter

abbreviated as "CCP") layer (25 µm)/maleic anhydride-modified polypropylene layer (10

µm)/saponified ethylene-vinyl ester copolymer layer (30 µm)/maleic anhydride-modified

polypropylene layer (10 µm)/CCP layer (25 µm).

HANADA et al.
Q67285
Preliminary Amendment

REMARKS

The specification has been amended to correct typographical errors. The present

amendments are not considered or intended to be a narrowing amendment surrendering any

equivalents.

Entry and consideration of this Amendment is respectfully requested.

Respectfully submitted,

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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

The specification is changed as follows:

Page 4, paragraph bridging pages 4-5:

In the present invention the infrared absorption spectrum of a sample is measured according to the following process. First, the sample is subjected to hot pressing at a temperature about 30 to 50°C higher than the melting point of a major component resin contained in the sample (for example about 200°C if the major component resin is a polypropylene resin) for three minutes and then subjected to cold pressing at 30°C for five minutes, to form a film having a thickness of 30 to 80 ~~mm~~µm. The film thus obtained is loaded on an infrared spectrometer (for example FT-IR spectrometer Model 1600 manufactured by PERKIN ELMER CO., LTD.) for measurement of its infrared absorption spectrum.

Page 7, first paragraph:

The thickness of the non-foamed surface layer is not particularly limited as long as the surface of the obtained foamed polyolefin resin sheet smoothness and may be determined depending on the application of the sheet or the like. The thickness of the non-foamed surface layer is usually not less than 1 ~~mm~~µm, preferably not less than 10 ~~mm~~µm, more preferably not less than 50 ~~mm~~µm, from the viewpoint of sheet rigidity. From the viewpoint of lightweight property, the non-foamed surface layer is preferably not so thick.

Page 27, second paragraph:

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Page 39, paragraph bridging pages 39 and 40:

As the non-foamed surface layer forming material there was used a resin mixture prepared by blending 100 parts by weight of polypropylene (trade name: PF814, produced by MONTEL CO., melting point: 159.0°C, crystallization temperature: 130.1°C, MFR: 2.2 g/10 min (230°C)) with 100 parts by weight of resin recycled from scrap of a foamed polyolefin resin sheet formed by laminating a multi-layered foamed sheet comprising non-foamed surface layer

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and foamed layer formed from a polypropylene resin and arranged into a structure of non-foamed surface layer (80 ~~im~~μm)/foamed layer (2200 ~~im~~μm)/non-foamed surface layer (80 ~~im~~μm) with a 100 ~~im~~μm-thick multi-layered film comprising non-stretched polypropylene (hereinafter abbreviated as "CCP") layer (25 ~~im~~μm)/maleic anhydride-modified polypropylene layer (10 ~~im)~~μm)/saponified ethylene-vinyl ester copolymer layer (30 ~~im~~μm)/maleic anhydride-modified polypropylene layer (10 ~~im~~μm)/CCP layer (25 ~~im~~μm).